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ABSTRACT

In brainstorming a group attempts to find a solution for a specific problem by amassing all the ideas spontaneously contributed by members. Brainstorming is recommended when the generation of ideas will be beneficial to the solution of problems. Four fundamental rules of brainstorming include: (1) criticism is not allowed during the thinking phase; (2) unconventional, wild ideas are encouraged; (3) quantity of ideas are sought; and (4) members are encouraged to combine and improve previous ideas. Ideas should be recorded in a reportorial manner. These ideas can be evaluated by the same or another group. The problem should be brief and to the point. Experts and amateurs should be included in the group. Experts disagree about whether or not the problem should be given to the group members before the brainstorming session. Advantagaes of brainstorming include participant enjoyment of the hard work, increase in initiative, and accomplishment of a task by a group in a shorter time than an individual would take. Disadvantages of brainstorming include forgetting the overall objective and group members using the session to pool knowledge rather than produce ideas. The value of brainstorming as an idea-getting technique has been proven time and time again. (ABL)

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The Process of Brainstorming

by
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Brainstorming is defined in Webster's Third New International Dictionary as a sudden inspiration or bright idea; and to practice a conference technique by which a group attempts to find a solution for a specific problem by amassing all the ideas spontaneously contributed by its members. Brainstorming has been utilized effectively by industry, educational institutions, and individuals. It is recommended for any situation where the generation of ideas will be beneficial to the solution of problems.

Alex F. Osborn is credited for developing the idea-getting technique of brainstorming in 1938. Osborn was in search of a technique that would produce a greater number and a unique variety of ideas for his advertising firm of Batten, Barton, Durstine, and Osborn. "Osborn claims that when his rules are applied, brainstorming never fails to come up with new and useful ideas."[1]

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There are four fundamental rules of brainstorming. They are:

(1) Criticism is not allowed during the thinking stage. This provides a positively reinforcing environment where no one will inhibit ideas for fear of being evaluated. If a member insists on evaluating he/she may be asked to leave in order to eliminate his/her negative effects.

(2) "Free-wheeling" is encouraged. The wilder the idea the better. Wild ideas can be tamed down during the evaluation stage. If no group member has divulged a crazy and unconventional idea to much internal evaluation may be present before speaking.

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(3) Quantity is seeked. The more ideas available the higher the probability of producing quality. Evaluation is stifled since members try to relate as many ideas as possible.

(4) Members are encouraged to combine and improve previous ideas of their own and others.

An additional ground rule set forth in Napier and Gershenfeld is: "When moving around the group, it is often helpful to limit members to one idea at a time so that less vocal or less aggressive individuals feel encouraged to get their ideas out."[2]

Brainstorming sessions should always be informal to allow for a relaxed atmosphere and an opportunity for members to be as open as possible. The only formal aspect is the position of the recorder. All ideas must be written in a reportorial (as said) rather stenographic manner. Some may not be recorded verbatim if the pace is such that it becomes difficult to do so.

"The spirit of a brainstorm session is important. Self-encouragement is needed almost as much as mutual encouragement. A perfectionism complex will throttle effort and abort ideas."[3]

The ideas produced by the brainstorm group are later evaluated by the same group or another group. If by the same group, there may be an opportunity to bring in still other ideas they feel are good. Many of the ideas may be eliminated but some will stand out as bases to build empires. Still others may need re-processing by means of modification or combination which may greatly improve a mediocre idea.

The subject of the problem should be specific so that participants have a narrow range to aim their ideas. The statement of the

problem should be at the beginning of the meeting to provide a framework for all thought to be directed. It should be brief and to the point. Its justification is debated during the evaluation stage only.

There are many suggestions concerning the size of the brainstorm group. Osborn believes "the ideal number is about a dozen."[4] John E. Arnold suggests a group size of 6 thru 10 with the ideal being 6 or 7. Even with these ideal suggestions it is believed that brainstorming can be just as effective with an individual as with a large group.

Brainstorming is an additive task in that the more ideas available the higher the probability that more will be useful. Many advocates of brainstorming believe that the individual should utilize his ability to brainstorm in order to be an effective group member. Rules for the group can be applied to the individual. By ruling out judgement individuals can produce twice as many good ideas.

In selecting group members "the person who can question, observe, associate, and not be afraid to predict will be a more effective brainstorming member than one not so equipped."[5] Other characteristics that contribute to brainstorming are problem sensitivity and awareness, fluency, flexibility and originality. This abundance of traits should be attained by having both experts and amateurs in the group. Too many experts can slow a group down. Amateurs can present their own ideas and spark new ideas from experts and others.

While mixing experts and amateurs can be beneficial it can also be detrimental. In a company, for example, assembly line workers may not feel comfortable enough to share ideas when their supervisor is present. This will cause them to hold back significant ideas that may help solve the presenting problem.

It has been found that women on brainstorm panels provide an extra surge of competition. There is a need for the men to try to "out-create" the women and vice-versa. This extra rivalry tends to produce an increased flow of ideas.

According to Osborn who has an industrial point of view "experience has likewise indicated that the ideal panel should consist of a leader, an associate leader, about five regular or 'core' members and about five guests. These core members serve as pacesetters. They should be people who have proved themselves to possess above-average facility in offering suggestions."[6] The type of guests invited will be determined by the existing problem. Those more knowledgable in the particular area will be the better candidates.

The Harvard Business School advises against presenting the problem before the brainstorming session. It believes that participants will discard many ideas that they feel may be silly or ridiculous. They do not take into consideration that those silly ideas may be the spark to new and fabulous ideas of other group members. On the other extreme participants may come up with one idea that they feel is the best. They become egocentrically

involved with that one idea and fail to contribute effectively throughout the session.

Osborn believes that panelists should receive the problem before the session. This will give them an opportunity to think up a wide range of suggestions. Participants, however, are not allowed to read off lists brought to the session.

The lenght of brainstorming sessions vary according to the flow of ideas forthcoming. Thirty minutes is about the optimum while many successful leaders advocate fifteen minutes or less. Still others let the session continue until the ideas stop flowing. It has been found that it is usually in the later stage of the session that more unique and possibly useful ideas begin to emerge.

For the brainstorming exercise I hypothesized that the Harvard suggestion of not presenting the problem beforehand was not valid. In the exercise Group 1 received the problem situation one week before the session. Group 2 did not receive the problem situation until the beginning of the session.

During the brainstorming session Group 1 produced 27,ideas and Group 2, 48. Group 1 confessed that many of them held back and disregarded ideas they felt were silly and ridiculous.

The session was fifteen minutes long. The frequency of ideas produced increased considerably in the second group when a time warning of five minutes was stated. The first group began finding it difficult to produce ideas after eleven minutes and were relieved when time was called.

Needless to say the Harvard suggestion is very valid. By presenting the problem beforehand group members think up ideas and also evaluate them. When they enter into the brainstorming session they disregard those they feel are to wild to share with the group. This limits their contributions and effects the generation of ideas. Therefore I think it is best to hold off on presenting the problem to group members until the beginning of the brainstorming session.

Brainstorming has been used by numerous businesses and educational institutions. The Aluminum Company of America, Bristol-Myers, Corning Glass Works, DuPont, General Electric, R.C.A., Scott Paper Company, Taylor Instruments and United States Steel are among the many that have utilized brainstorming to increase productivity. Creative institutes and creative problem-solving courses at universities have increased the use and understanding of brainstorming. Parnes has established a creative institute at the University of Buffalo, that performs research in this area. The federal government used brainstorming to get 121 ideas in 30 minutes. The presenting problem was "What can federal employees do to give visitors to Washington a truer and better impression of their government?"[7] Other government areas that have used brainstorming are the U.S. Treasury personnel, the armed services, and the Veterans Administration.

The effects of deferring judgement during the idea producing stage was shown through a Meadow-Parnes study. Two groups brainstormed the same problem while one deferred judgement and the other

did not. In the same amount of time the deferred judgement group produced 70% more good ideas. The same increase of good idea production was shown for individuals. By deferring judgement individuals produced 90% more good ideas.

The increase in idea production is one advantage of brainstorming. Other advantages include:

(1) many participants enjoy the hard work involved.

(2) increase in initiative. Willingness to search for ideas previously denied.

(3) ideas are presented in an accepting, non-judgemental environment.

(4) sense of competition helps promote wildness if ideas.

(5) previous ideas can be used to make new ideas without feelings of using someone elses thoughts.

(6) the group can accomplish in a short time what it would take an individual much longer to accomplish.

(7) provide a mental and physical environment for the encouragement of creative talent.

(8) reduces dependency upon a single leader

and (9) provides the members with immediate visibility for the ideas that are provided (assuming they are shared).

Disadvantages include the following:

(1) instead of producing ideas group members use the session to pool knowledge and experience.

(2) over-all objective is forgotten. Members begin to think that brainstorming is an ends rather than a means to an end.

and (3) thought of as a way to make ordinary people into "geniuses" which has not been the case. It only provides the opportunity to increase ones ability to solve problems.

"Thus the process is self-reinforcing; it draws the participants into new avenues of thought and into a new pattern of communication. How efficient the method is - and it can be efficient - is a factor of secondary importance to its potential for facilitating shared problem solving."[8]

Other creative problem-solving methods that have developed out of brainstorming are nominal, trigger, round robin groups and the wildest idea. These like brainstorming help increase the production of ideas needed to solve problems. Brainstorming is used in various situations from educational institutions to businesses. Its value as an idea-getting technique has been proven time and time again.

FOOTNOTES

[1]Arnold, John E. "Useful Creative Techniques." In A Source Book for Creative Thinking. Edited by Sidney J. Parnes and Harold F. Harding, New York: Charles Scribner's Sons, 1962, page 261.

[2]Napier, Rodney W. and Gershenfeld, Matti K. Groups: Theory and Experience (Second Edition). Boston: Houghton Mifflin Company, 1981, page 386.

[3]Osborn, Alex F. Applied Imagination: Principles and Procedures of Creative Problem-Solving (Third Revised Edition). New York: Charles Scribner's Sons, 1963, page 157.

[4]Ibid, page 159.

[5]Arnold, page 264.

[6]Osborn, page 172.

[7]Ibid, page 180.

[8]Napier and Gershenfeld, pages 386-387.

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